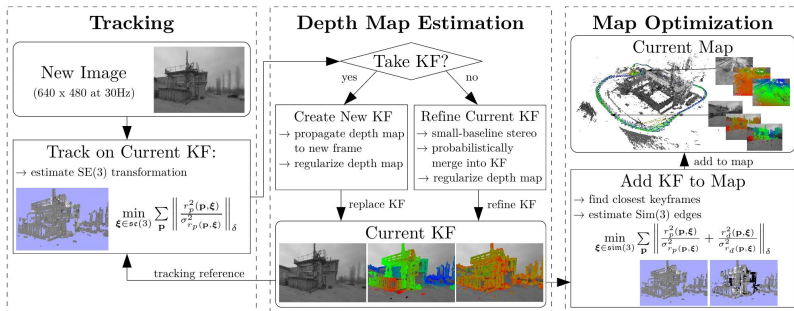


LSD-SLAM: Large-Scale Direct Monocular SLAM

J. Engel, T. Schops and D. Cremers (ECCV 2014)



- ▶ Feature-less monocular SLAM algorithm which allows to build large-scale maps
- ▶ Novel direct tracking method that detects loop closures and scale-drift using similarity transform in 3D
- ▶ Direct image alignment with 3D reconstruction in real-time
- ▶ Pose-graph of keyframes with associated probabilistic semi-dense depth maps
- ▶ Semi-dense depth maps are obtained by filtering over a large number of pixelwise small-baseline stereo comparisons
- ▶ Probabilistic solution to include the effect of noisy depth values into tracking
- ▶ Evaluation on TUM RGB-D benchmark